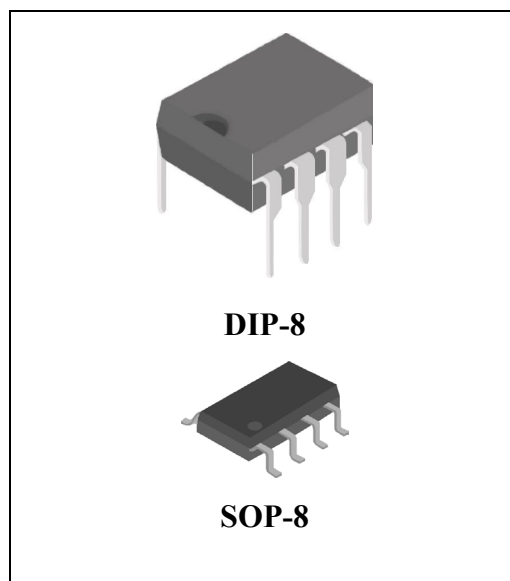


Dual Low Noise Operation Amplifier

**FEATURES**

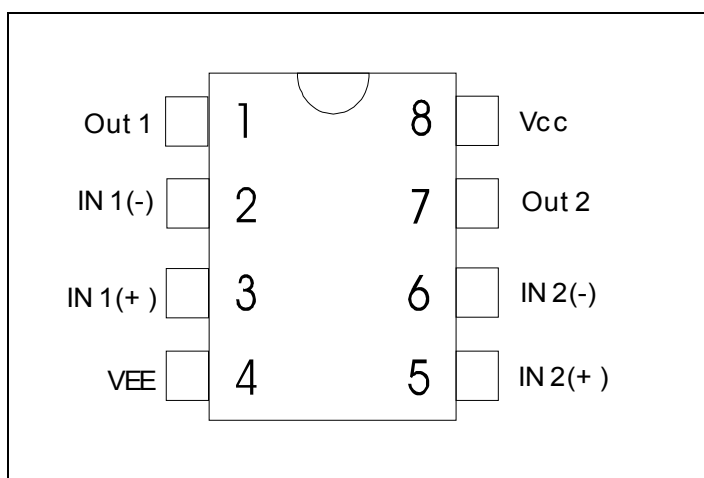
- No Frequency Compensation Required
- No Latch-Up
- Gain and Phase Match Between Amplifier
- Large Common Mode and Voltage Range
- Parameter Tracking Over Temperature Range
- Internally Frequency Compensated
- Low Noise Input Transistors



**PRODUCT DESCRIPTION**

The SM4558 series are a monolithic integrated circuit designed for dual operational amplifier. Wide Band Range :  $f_T = 3\text{MHz}$  ( type ) , and suitable application for active filter and equalizer amplifier.

**PIN CONFIGURATION**



**ORDERING INFORMATION**

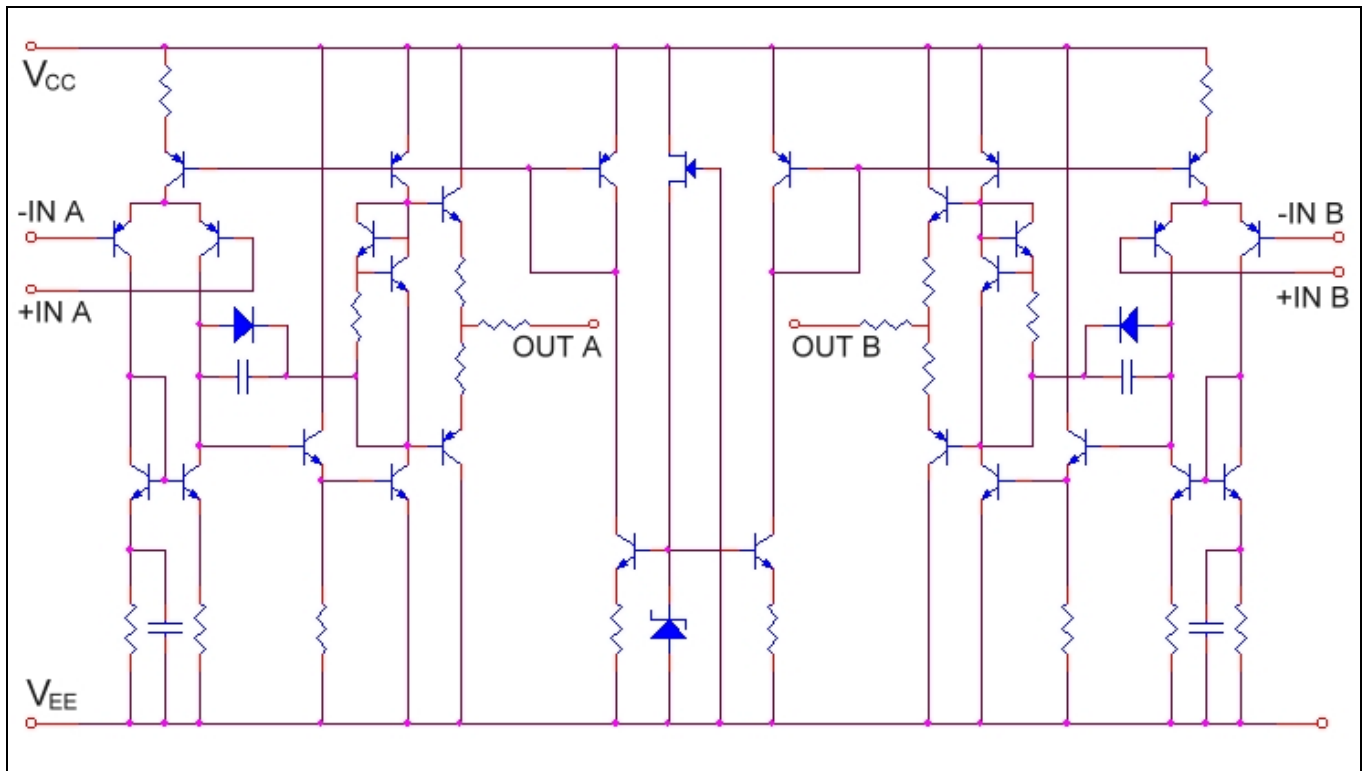
Part Number	Operating Temperature Range	Package Type
SM4558N	0°C~+70°C	DIP-8
SM4558S	0°C~+70°C	SOP-8

Dual Low Noise Operation Amplifier

**ABSOLUTE MAXIMUM RATING**

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	36,+18	V
	$V_{EE}$	0,-18	
Differential Voltage	$D_{VIN}$	$\pm 30$	
Input Voltage	$V_{IN}$	$V_{CC} \sim V_{EE}$	
Power Dissipation	$P_D$	SM4558N 500	mW
		SM4558S 240	
Storage Temperature	$T_{stg}$	-55 ~ 125	$^{\circ}C$
Operating Temperature	$T_{opr}$	-40 ~ 85	$^{\circ}C$

**SCHEMATIC DIAGRAM**



Dual Low Noise Operation Amplifier

**ELECTRICAL CHARACTERISTICS** ( $V_{CC}=15V, V_{EE}=-15V, T_A=25^{\circ}C$  unless otherwise specified.)

Characteristics	Symbol	Min	Typ	Max	Unit
Input Offset Voltage $R_g \leq 10\text{ k}\Omega$	$V_{IO}$		0.5		mV
Input Offset Current	$I_{IO}$		5	200	nA
Input Bias Current	$I_I$		60	500	nA
Common Mode Input Voltage	$CMV_{IN}$	612	614		V
Maximum Output Voltage $R_L \leq 10\text{ k}\Omega$	$V_{OM}$	612	614		V
	$V_{OMR}$	610	613		
Source Current	$I_{SOURCE}$	27			mA
Sink Current	$I_{Sink}$	27			
Voltage Gain ( Open Loop) $R_L=2\text{ k}\Omega \quad V_{OUT}=10\text{ V}$	$G_V$	86	100		dB
Common Mode Input Signal Rejection Ratio $R_g \leq 10\text{ k}\Omega$	CMRR	70	90		dB
Supply Voltage Rejection Ratio $R_g \leq 10\text{ k}\Omega$	SVRR		30	150	$\mu V/V$
Slew Rate $R_L=2\text{ k}\Omega, G_v=1$	SR		1.0		V/ $\mu S$
Unity Gain Cross Frequency $\text{Open Loop}$	$f_T$		3.0		MHz
Supply Current	$I_{CC}, I_{EE}$		4.0	6.0	mA
Equivalent Input Noise Voltage $R_s=1\text{ k}\Omega, f=30\text{Hz} \sim 30\text{kHz}$	$V_{NI}$		2.5		$\mu V_{rms}$

Dual Low Noise Operation Amplifier

ELECTRICAL CHARACTERISTICS CURVES

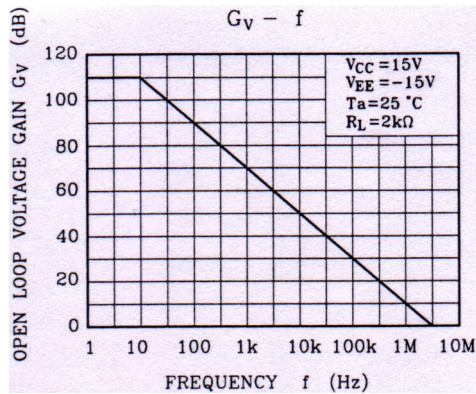


Fig 1. Open Loop Frequency Response

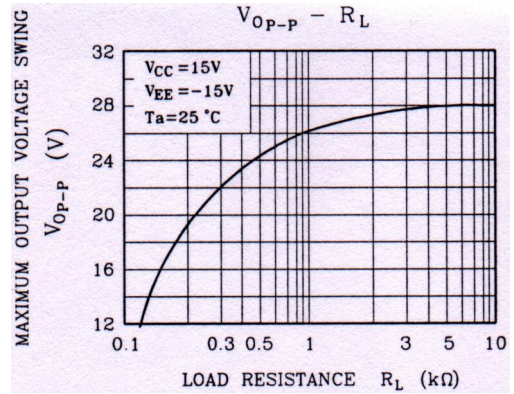


Fig 2. Output Voltage Swing Vs Load Resistance

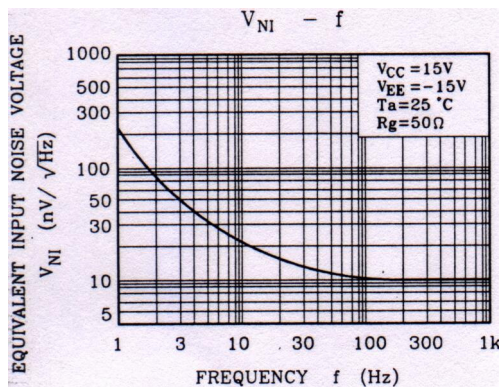


Fig 3. Spectral Noise Density

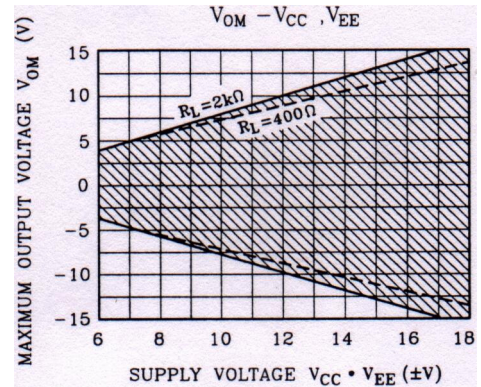


Fig 4. Output Voltage Vs Supply Voltage

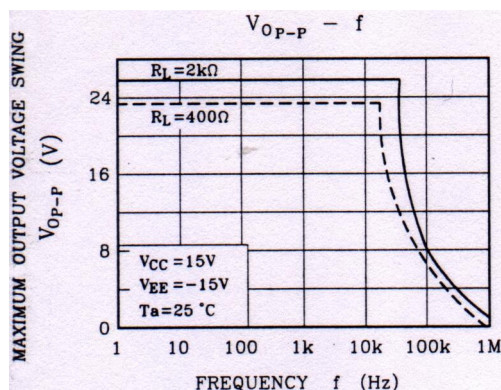


Fig 5. Power Bandwidth

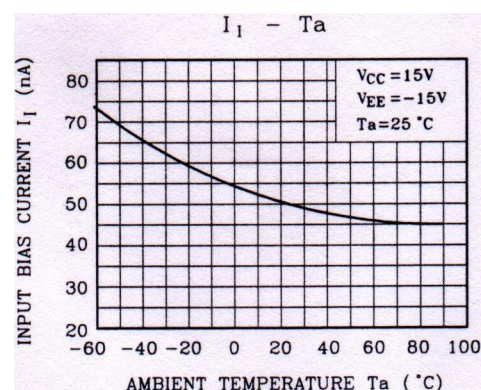


Fig 6. Input Bias Current